

D. Page 10, Example: After the last word of Example 1, "solution" add

-showed no fluorescence.-

This added text does not represent any new matter and is copied from Example 2 in which the same method for forming a mucin-DNA complex is described.

E. Page 15, replace the title "SUMMARY OF THE INVENTION" with -ABSTRACT-

F. CLAIMS: Please cancel Claim 10.

G. CLAIMS: Please amend the claims as follows:

- 8031
1. A mucin-DNA (deoxyribonucleic acid) complex formed by combining [said] mucin and [said] DNA [in any configuration] for the transport of said mucin-DNA complex into a cell [using either in vivo or in vitro methods].
  2. A mucin-biomolecules complex formed by combining [said] mucin and [said] biomolecules [in any configuration] for the transport of said mucin-biomolecules complex into a cell [using either in vivo or in vitro methods].
  3. [Mucin as in claims 1 and 2] A mucin-DNA complex as in claim 1, where said mucin [can be a combination of one or more different types of mucin molecules obtained from any biological or non-biological source] is selected from the group consisting of mucin from a biological source; mucin from a non-biological source; and, combinations thereof.
  4. [Mucin, as in claims 1 and 2] A mucin-DNA complex as in claim 1, where said mucin [can be in its native state or modified using any biological, chemical, enzymatic, heat-based or other means of modification] is selected from the group consisting of mucin in its native state; biologically modified mucin; chemically modified mucin; mucin modified by enzymes; mucin modified by heat-based methods; and, combinations thereof.
  5. [Mucin, as in claims 1 and 2] A mucin-DNA complex as in claim 1, where said mucin [can contain] contains sialic acid [and its derivatives].
- 14
- X

Sub B2 → 6. [DNA, as in claims 1 and 2] A mucin-DNA complex, as in claim 1, where said DNA [can be DNA or any other nucleic acid derived in a natural state, modified, or created synthetically and in any shape including linear, circular, single or double-stranded] is selected from the group consisting of DNA in its natural state; modified DNA; synthetically created DNA; linear DNA; circular DNA; single-stranded DNA; double-stranded DNA; and, combinations thereof.

7. [Biomolecules,] A mucin-biomolecules complex as in claim 2, where said biomolecules [may consist of one or more biomolecules] are selected from the group consisting of [, but not limited to,] DNA, RNA, nucleic acids, proteins, peptides, antibodies, glycolipids, glycoproteins, [natural, synthetic and] natural polymers, synthetic polymers, modified polymers, [or any combination] and combinations thereof.

Sub B3 → 8. [Biomolecules,] A mucin-biomolecules complex as in claim 2, where said biomolecules [can be derived in a natural state, modified, or created synthetically] are selected from the group consisting of biomolecules in their natural state; modified biomolecules; synthetically created biomolecules, and combinations thereof.

7 9. A mucin-DNA complex as in claim 1 [and mucin-biomolecules complex as in claim 2], where said complex [can be] is purified by [any chromatographic methods] a method selected from the group consisting of chromatographic methods, centrifugation methods, and, combinations thereof.

Sub B4 → 8 11. A mucin-DNA complex as in claim 1 [and mucin-biomolecules complex as in claim 2], where said mucin in said complex can undergo [any] modifications including [, but not limited to,] the addition, removal or [alternation or] alteration of the carbohydrate or protein components [or molecules of] comprising said mucin.

9 12. A mucin-DNA complex as in claim 1 [and mucin-biomolecules complex as in claim 2], where said mucin in said complex [can be] is modified to target specific cells as the targets of transfection.

13. A mucin-DNA complex as in claim 1 [and mucin-biomolecules complex as in claim 2], where said complex [can be] is used [in] for applications [including but not limited to] selected from the group consisting of gene therapy, cell repair, cell modification, [or] the production of specific proteins or enzymes in specific cells, and combinations thereof.

12. ~~A mucin-biomolecules complex as in claim 2, where said mucin is selected from the group consisting of mucin from a biological source; mucin from a non-biological source; and, combinations thereof.~~

13. ~~A mucin-biomolecules complex as in claim 2, where said mucin is selected from the group consisting of mucin in its native state; biologically modified mucin; chemically modified mucin; mucin modified by enzymes; mucin modified by heat-based methods; and, combinations thereof.~~

14. ~~A mucin-biomolecules complex as in claim 2, where said mucin contains sialic acid.~~

15. ~~A mucin-biomolecules complex as in claim 2, where said complex is purified by a method selected from the group consisting of chromatographic methods, centrifugation methods, and, combinations thereof.~~

16. ~~A mucin-biomolecules complex as in claim 2, where said mucin in said complex can undergo modifications including the addition, removal or alteration of the carbohydrate or protein components comprising said mucin.~~

17. ~~A mucin-biomolecules complex as in claim 2, where said mucin in said complex is modified to target specific cells as the targets of transfection.~~

18. ~~A mucin-biomolecules complex as in claim 2, where said complex is used for applications selected from the group consisting of gene therapy, cell repair, cell modification, the production of specific proteins or enzymes in specific cells, and combinations thereof.~~